

DATA BASE MANAGEMENT GROUP
INFORMATION MANAGEMENT SERVICES
NEBRASKA DEPARTMENT OF ADMINISTRATIVE SERVICES

DB2 -805 SQL ANALYSIS AND RESOLUTION

-805 SQLCODE RESOLUTION

INTRODUCTION

The purpose of this document is to provide the "how-to" knowledge required to resolve -805 SQLCODE errors. The document is divided into three sections. Section 1 will provide the DB2 knowledge required to understand a -805 SQLCODE and why it occurs. Section 2 will demonstrate step-by-step how to obtain the error information using Platinum Detector. Section 3 will itemize the steps required to resolve the error.

The primary focus of this document will be -805 SQLCODE errors that occur in the test DB2 subsystem, DBT. Some of the text and Figures may include references to production libraries and naming conventions, but authorization restrictions prevent the average user from performing binds in the production subsystem. If -805 SQLCODE errors are occurring in production, contact the DBM group for assistance.

Many of the figures in this document represent online screens from the Platinum suite of products. For this reason, it is necessary to include some instruction of the navigation of the Platinum tools. By no means is this instruction complete. Please contact the DBM group if you need additional assistance with the Platinum products. Certain areas of the figures representing online screens have been highlighted with shading for easier identification. These areas represent data that is to be entered, or data items that are referenced in the text and required in subsequent steps.

SECTION 1 - UNDERSTANDING THE -805 SQLCODE

To understand -805 SQLCODEs, it is necessary to first understand how DB2 programs are prepared and executed. Following are descriptions of the four steps required to prepare a DB2 program for execution, followed by a narrative of the steps performed at execution time. Figure 1.1 on the next page provides a diagram of the program preparation process.

DB2 PRECOMPILE

The DB2 Precompile performs three functions. First, it checks the SQL in the program for errors. Second, it adds working storage areas and source code compatible statements that are used to invoke DB2. One of the working storage areas contains a literal "timestamp" called a consistency token. Finally, all of the SQL statements are extracted from the program source and placed into a member called the DataBase Request Module, or DBRM, which also contains the consistency token.

COMPILE

The modified source from the precompile is then compiled. The code is checked for errors, and a compiled version of the code is created.

LINK-EDIT

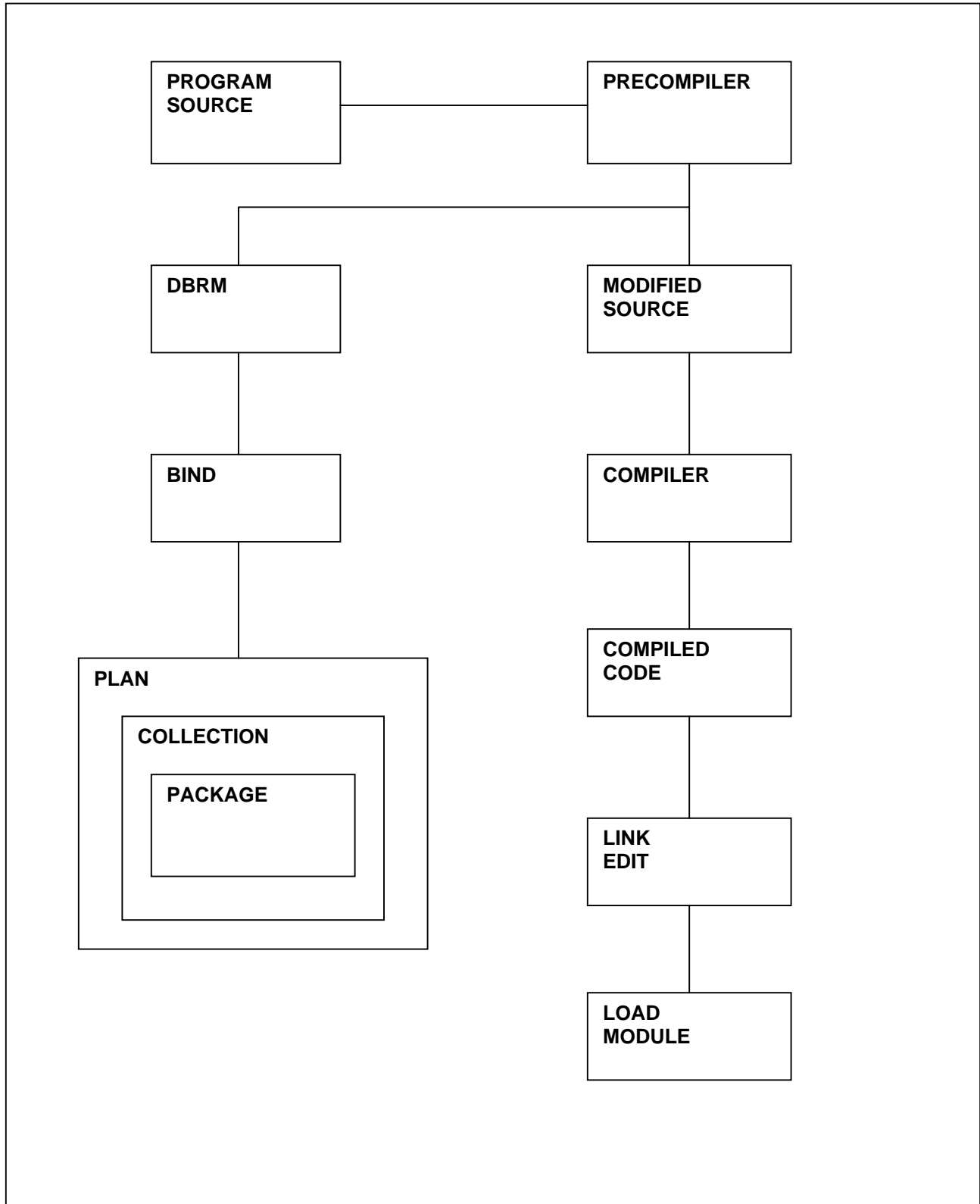
The compiled code is link-edited along with statically called source language and DB2 run-time modules to create a Load Module. Imbedded in this module is the same consistency token that was generated in the precompile. If multiple DB2 programs are statically linked together, the resulting load module contains a consistency token for each one.

DB2 BIND

The bind process reads the DBRM that was created in the precompile and prepares an access path to the data. This access path, along with the consistency token, is stored in the DB2 catalog as a Package. Every Package is bound into a Package List, or Collection. The name of the Collection is specified by the PACKAGE parameter. A Collection is a group of Packages that are included in one or more Plans. The QUALIFIER parameter of the bind is used to direct the SQL to the specific set of DB2 objects (tables, views, aliases or synonyms) qualified by this name.

PROGRAM EXECUTION

When an task containing a DB2 program executes, the plan name must be specified. For online CICS programs, the plan name is specified by Tran ID in the Resource Control Table (RCT). For a batch program, the plan name is specified in the SYSTSIN input DD. The packages for all DB2 programs executed under a Tran ID or batch job step must be included in collection bound into this plan. When the first SQL statement of each program is executed, DB2 searches the collections within the plan using the package name and consistency token from the load module. If an exact match is not found, a -805 SQLCODE is returned.

Figure 1.1 DB2 Program Preparation

SECTION 2 - OBTAINING THE ERROR INFORMATION

This section will provide step-by-step instruction for finding the text of a -805 error message in Platinum Detector. Although it is not necessary to use Platinum Detector to find this information, there are several pieces of information contained in the message that are needed to properly resolve the error. This same information can usually also be obtained from the output listing of a batch job, or in the Abend-Aid output for an online transaction.

Begin by selecting Platinum from the TSO Primary Option Menu. The option varies between TSO logon procedures and is therefore not included in this document. Once in Platinum, the Platinum Products Main Menu represented in Figure 2.1 should be displayed. From this menu, select Detector by entering 'dt' on the Option line.

Figure 2.1

RM R03.00 ----- PLATINUM Products Main Menu -----			06-20-96 13:26:40
OPTION ==> dt			SCROLL ==> PAGE
DB2 SSID ==> DBT	LOCATION ==> LOCAL	DB2 VERSION: V3R1M0	
ACM ==> OFF	ACMID ==> DBMZ127	SQLID ==> DBMZ127	TAPE VERSION: P512AA
CATALOG FACILITY	UTILITIES	INFORMATION ENVIRONMENT	
1 RC/Query	U Utilities Menu	G Guide/Online	
2 RC/Migrator		L InfoRefiner	
3 RC/Update	PRODUCTS FOR QMF	N Data Navigator	
4 RC/Secure	O Governor Facility	RI RI Manager	
	OT Object Tracker	V Viewer for DB2	
ANALYZERS	J Object Administrator		
D Database Analyzer	QA Query Analyzer	GENERAL FACILITIES	
K Package/It	Q Compile/QQF	E General Selections	
Z Recovery Analyzer	XF Execution Facility	X Exit PLATINUM products	
P Plan Analyzer			
S SQL-Ease	PLATINUM REPORT FACILITY		
DT Detector	R Report Facility Menu		
TT Thread Terminator			
LA Log Analyzer			
DA Dependency Analyzer			

From the Platinum Detector Main Menu represented in Figure 2.2, enter '1' on the Option line, and ensure that the DB2 SSID is set to the correct subsystem.

Figure 2.2

```

V02.01      ----- PLATINUM DETECTOR Main Menu ----- 06-20-96 13:27
OPTION ==> 1
DB2 SSID ==> DBT                                USERID ==> DBMZ1273

-----

1  VIEW CURRENT DISPLAYS      - View current interval collections
2  VIEW HISTORY DISPLAYS     - View historical collections
3  VIEW COLLECTION STATUS    - View current collection status
4  VIEW/MODIFY PROFILES      - View, create, or modify collection profiles
5  INITIALIZE COLLECTION     - Initialize collection for a subsystem
6  TERMINATE COLLECTION      - Terminate collection for a subsystem
7  INITIALIZE DATASTORE     - Create and initialize a collection datastore

8  ADDITIONAL FEATURES      - Additional product features and functions

P  PRODUCT PROFILE          - View or modify Detector product profile
T  TUTORIAL                 - Detector tutorial
X  EXIT DETECTOR            - Terminate Detector ISPF session
  
```

From the Detector Planname Summary Display represented in Figure 2.3, select a View Type of 'E' to display SQL Errors.

NOTE: The Interval Elapsed field on this screen indicates the length of time that the current collection has been active. If the error occurred before this time, it will not be displayed in the current interval.

Figure 2.3

```

V02.01      ----- DETECTOR Planname Summary Display ----- 06-20-96 13:32
Command ==>
                                           Scroll==> CSR
                                           LINE 1 OF 49
View Type ==> E      (S=Standard,D=Dynamic,E=SQL Error)      DB2 SSID ==> DBT_
View By ==> P      (P=Plan,G=Program,S=SQL,F=Profile)
Display ==> T      (T=Totals,A=Averages)

Interval Time ==> 24:00                      Interval Elapsed ==> 04:46:31
----->
Line Commands:      S -Select/view, D -Detail display

PLANNAME  COMMIT  ABORT  SQL      TIMEPCT  CPUPCT  INDB2_TIME
-----
_ IEFDOWN  1861      0     4505416  58.89%   78.08%   01:08:20.698
_ NFOONLU4 1030     28      51889   11.60%    3.43%   13:27.988895
_ F2PLN370  52       55       7973    .57%     .22%    00:40.247554
_ PFSONLS1  65        0       1874    .27%     .04%    00:19.160154
_ QMFTSO   249      41     119435   2.94%    2.40%    03:25.041452
_ MCPONLU3 249       0       1768    .32%     .06%    00:22.468917
_ TSIONLU1  6         0        326    .37%     .01%    00:25.854239
  
```

From the Detector SQL Error Summary Display represented in Figure 2.4, place an 'S' in front of the -805 SQLCODE line.

Figure 2.4

V02.01 ----- DETECTOR SQL ERROR Summary Display ----- 06-20-96 13:32

Command ==>

Scroll ==> CSR

View Type ==> E (S=Standard,D=Dynamic,E=SQL Error)

DB2 SSID ==> DBT_

View By ==> C (C=SQLcode,U=User,G=Program,L=List)

Interval Time ==> 24:00

Interval Elapsed ==> 04:46:

U -View users G -View programs L -List errors

SQLCODE	COUNT	USERS	PROGRAMS	LASTDATE	LASTTIME	1STDATE	1STTIME
-----	-----	-----	-----	-----	-----	-----	-----
-501	2740	8	31	06/20/96	13:26:07	06/20/96	08:46:29
-204	35	10	3	06/20/96	13:03:54	06/20/96	08:46:30
-811	3092	6	8	06/20/96	13:23:41	06/20/96	08:47:15
-803	1162	13	14	06/20/96	13:26:07	06/20/96	08:57:37
-514	24	7	1	06/20/96	12:25:37	06/20/96	09:24:10
s -805	22	8	7	06/20/96	13:31:27	06/20/96	09:31:51
-180	6	3	3	06/20/96	12:36:00	06/20/96	09:34:13
-911	2	2	2	06/20/96	12:29:40	06/20/96	09:57:39
-904	1	1	1	06/20/96	10:36:09	06/20/96	10:36:09
-925	2	1	1	06/20/96	10:37:05	06/20/96	10:37:03
-535	3	1	1	06/20/96	11:06:14	06/20/96	11:06:14
-551	3	3	3	06/20/96	11:32:53	06/20/96	11:07:40
-305	2	1	2	06/20/96	11:56:50	06/20/96	11:41:47

***** BOTTOM OF DATA *****

The Detector screen represented in Figure 2.5 displays all combinations of OPIDs and plans that have had -805 SQLCODES returned during the collection interval. Place an 'S' in front of the OPID and plan whose -805s you wish to investigate.

Figure 2.5

V02.01 ----- DETECTOR SQL ERROR User/SQLCODE Summary ----- 06-20-96 13:40							
Command ==>				Scroll ==> CSR			
SQLcode ==> -805				DB2 SSID ==> DBT			
Interval Time ==> 24:00				Interval Elapsed ==> 04:53:49			
OPID	PLANNAME	CONNID	COUNT	LASTDATE	LASTTIME	1STDATE	1STTIME
-----	-----	-----	-----	-----	-----	-----	-----
_ A400PROD	VTRONLT1	NEBRTC14	5	06/20/96	13:34:33	06/20/96	09:31:51
_ DBMZ127	PDTAP512	DB2CALL	1	06/20/96	13:31:27	06/20/96	13:31:27
s WELZ287	RFSBATC3	DB2CALL	1	06/20/96	13:13:45	06/20/96	13:13:45
_ WELZ368	NFOBATUM	DB2CALL	11	06/20/96	13:00:32	06/20/96	12:47:57
_ DR10113	CSFONLS1	NEBRTC12	1	06/20/96	11:17:21	06/20/96	11:17:21
_ DBMZ001	PDTAP512	DB2CALL	1	06/20/96	10:51:24	06/20/96	10:51:24
_ DBMZ129	PDTAP512	DB2CALL	1	06/20/96	10:38:18	06/20/96	10:38:18
_ CICSMSVSU	TSIONLU1	NEBRMCI1	2	06/20/96	10:10:33	06/20/96	10:10:32
***** BOTTOM OF DATA *****							

The screen represented in Figure 2.6 displays all occurrences of the SQL error for the Opid and plan during the collection interval. Place an 'S' in front of the error you wish to investigate.

Figure 2.6

```

V02.01      ----- DETECTOR SQL Error Detail Display -----
Command ==>
06-20-96 13:43
Scroll==> CSR

SQLcode ==> -805      SQLstate ==> 51002      DB2 SSID ==> DBT
Opid      ==> WELZ287  Planname ==> RFSBATIC3    Connid  ==> DB2CALL

Interval Time ==> 24:00      Interval Elapsed ==> 04:57:07
----->

S -SQLCA Message Display, C -SQL Call Text

  PROGRAM  TYPE  SQL_CALL  STMT# SECT#      DATE      TIME
  -----
s RFS998VS  DBRM  OPEN      1187    1      06/20/96   13:13:45
*****
***** BOTTOM OF DATA *****

```

The screen represented in Figure 2.7 displays the SQL error message that was generated by DB2. The shaded areas in this figure represent the plan name (RFSBATIC3), the consistency token (15A1845103BD9FB0) and the package name (RFS998VS). Once you have obtained these three pieces of information for the -805 SQLCODE that you are researching, proceed to Section 3.

Figure 2.7

```

V02.01      ----- DETECTOR SQLCA Data Area Display -----
Command ==>
06-20-96 13:44
Scroll==> CSR

Display ==> M (M=Messages,X=Hex)      DB2 SSID ==> DBT

SQLcode ==> -805      Opid  ==> WELZ287      Planname ==> RFSBATIC3
SQLstate ==> 51002    Connid ==> DB2CALL      Contoken ==> 15A1845103BD9FB0
Program  ==> RFS998VS  Type   ==> DBRM      Stmt#   ==> 1187
Collid   ==>
Version   ==>

-----
DSNT408I SQLCODE = -805, ERROR: DBRM OR PACKAGE NAME LINCOLN_TEST_DBT..RFS9-
98VS.15A1845103BD9FB0 NOT FOUND IN PLAN RFSBATIC3. REASON 03
DSNT418I SQLSTATE = 51002 SQLSTATE RETURN CODE
DSNT415I SQLERRP  = DSNXEPM SQL PROCEDURE DETECTING ERROR
DSNT416I SQLERRD  = -250 0 0 -1 0 0 SQL DIAGNOSTIC INFORMATION
DSNT416I SQLERRD  = X'FFFFFF06' X'00000000' X'00000000' X'FFFFFFF'
X'00000000' X'00000000' SQL DIAGNOSTIC INFORMATION
*****
***** BOTTOM OF DATA *****

```


SECTION 3 - RESOLVING THE -805 SQL ERROR

The following steps to resolve a -805 SQLCODE examine the problem first at the plan, then collection, and finally the package level. It is not necessary to perform the steps in this order, however, some steps refer to information obtained or actions taken in preceding steps.

To get to Platinum RC/Query, which is used in several of the steps, enter '1' on the Option line of the Platinum Products Main Menu (Figure 2.1).

STEP 1 - ENSURE THAT THE CORRECT PLAN IS BEING USED

Figure 3.1 Plan and Collection Names

Plans and Collections share the same naming convention		
Batch : sssBATtp	where	sss = system acronym
Online : sssONLtp		t = tier (U,S,C,T,A,P)
		p = path (1,2,3,4,0)
 NOTE: Production tier and path (tp) designation is P0.		
 Collections are bound into plans of the same name by default, and into other plans as needed.		

Examine the plan name that was found in the error display. See Figure 3.1 for a breakdown of the plan name. The system acronym of the plan should match the system acronym of the first DB2 program executed in the job step or transaction. Ensure that the tier and path designator in the plan name match the tier and path at which you are executing. If the plan name does not appear to be correct, take one of the following actions:

Online Programs:

If the plan name does not appear to be correct, and you are executing an online program, make sure that you are signing onto the correct CICS region. If so, contact the DBM group to determine if the RCT entry for your transaction exists, and references the correct plan.

Batch Programs:

If the plan name does not appear to be correct, and you are executing a batch program, locate the SYSTSIN DD statement in the job step. (If it is missing, you have probably found your problem!) The SYSTSIN can either refer to a DB2 Control dataset, or the statements can be entered in-stream. Refer to Figure 3.2 for an example of each. If in-stream cards are used, change the name of the PLAN parameter to the correct plan name. If a DB2 Control dataset was used, change the member name to the correct plan name. If the member name was already correct, but it is different than the plan name found in the -805 SQL Error, contact the DBM group for assistance.

Figure 3.2 the SYSTSIN DD statement

```
//SYSTSIN DD DSN=xxx.CHAINc.DB2.CONTROL(sssBATtp),DISP=SHR
```

- OR -

```
//SYSTSIN DD *
DSN SYSTEM(DBT)
PLAN(sssBATtp)
/*
```

where xxx = tier (UNT,STG,CAT,PRD)
 c = chain (A,B,C)
 sss = system acronym
 t = tier (U,S,C,P)
 p = path (1,2,3,4,0)

NOTE: Production is PRD.DB2.CONTROL(sssBATP0)

STEP 2 - ENSURE THAT THE COLLECTION IS IN THE PLAN

When a package is bound, the system acronym of the package should always match that of the collection into which it bound. By default, each collection is bound into the plan with the same name. In order for a package to be executed under a plan with a different system acronym, the collection from one system must be bound into the plan of the other. To see a list of collections bound into a plan, see Figure 3.3 for an SQL statement that can be entered via QMF or ISQL.

Figure 3.3 SQL to display Collections in a Plan

```
SELECT PLANNAME, COLLID
FROM SYSIBM.SYSPACKLIST
WHERE PLANNAME = 'planname'
```

Using RFSBATIC3 as the planname returns the following result:

3 ROWS RETRIEVED

PLANNAME	COLLID
RFSBATIC3	RFSBATIC3
RFSBATIC3	NFOBATIC3
RFSBATIC3	DBMBATIC0

If the collection (COLLID) with the system acronym that matches the package does not appear on this list, contact the DBM group to have the collection added to the plan.

STEP 3 - DETERMINE IF THE PACKAGE IS IN THE COLLECTION

From the RC/Query Main Menu, represented in Figure 3.4, enter 'pk' as the DB2 Object, 'I' as the Option, and enter the Collection name in the Qualifier. This will display a list of packages in the collection on the RC/Q Application Package List screen, which is represented in Figure 3.5. If the package appears on this list, go on to Step 5 to find the load that is being executed. If the package does not appear on this list, proceed to Step 4 to find the DBRM.

Figure 3.4

```

RQM          R03.05 ----- RC/Q Main Menu -----          06-21-96 09:06:06
COMMAND ==>

DB2 Object ==> pk          Option ==> I
Item Name  ==> *          Creator ==> *          Where => N
Qualifier  ==> rfsbatc3    Grantor ==> *

----- DBMZ127
Location ==> LOCAL        DB2 SSID ==> DBT          DB2 Version => V3R1M0

DB2 OBJECTS:
          T - Table
          V - View
          I - Index
          C - Column
          S - Synonym
          A - Alias
          RI - Referential Intearity
          SG - Storage Group
          DB - Data Base
          TS - Table Space
          BP - Buffer Pool
          U - User
          SY - System
          VC - VSAM Catalog
          P - Plan
          CL - Collection
          PK - Package
          DR - DBRM
  
```

Figure 3.5

```

RQPKL R03.05 ----- RC/Q Application Package List ----- 06-21-96 09:21:23
COMMAND ==>          SCROLL ==> CSR

DB2 Object ==> PK          Option ==> L
Package   ==> *          Creator ==> *          Where => N
Collection ==> RFSBADC3    Grantor ==> *
Version   ==> *

Loc:  LOCAL ----- SSID: DBT ----- DBMZ127 - LINE 22 OF 39 >
CMD  NAME      CREATOR   BOUNDBY   COLLECTION  V O E PDSNAME
-----
RFS905VS DSSADC3   WELZ287   RFSBADC3   Y Y N TPD.DBRMLIB
RFS906   DSSADC3   DBMZ127   RFSBADC3   Y Y N CAT.CHAINB.
RFS906VS DSSADC3   DBMZ127   RFSBADC3   Y Y N TPD.DBRMLIB
RFS907VS DSSADC3   DBMZ127   RFSBADC3   Y Y N TPD.DBRMLIB
RFS908VS DSSADC3   DBMZ127   RFSBADC3   Y Y N TPD.DBRMLIB
RFS909VS DSSADC3   DBMZ127   RFSBADC3   Y Y N TPD.DBRMLIB
RFS910VS DSSADC3   DBMZ127   RFSBADC3   Y Y N TPD.DBRMLIB
RFS912VS DSSADC3   DBMZ127   RFSBADC3   Y Y N CAT.CHAINB.
RFS915VS DSSADC3   DBMZ127   RFSBADC3   Y Y N CAT.CHAINB.
RFS997VS DSSADC3   WELZ287   RFSBADC3   Y Y N UNT.CHAINA.
RFS998VS DSSADC3   WELZ287   RFSBADC3   Y Y N UNT.CHAINA.
RFS999   DSSADC3   DBMZ127   RFSBADC3   Y Y N CAT.CHAINB.
RFS999VS DSSADC3   WELZ287   RFSBADC3   Y Y N UNT.CHAINA.
***** BOTTOM OF DATA *****

Options:      D=Detail, L=List, DP=Dependencies, E=Explain, ST=Statement,
              UA=User Auth, CN=Connection
  
```

STEP 4 - FIND THE DBRM

The purpose of this step is to find the DBRM that was created by the pre-compile of the program. DBRMs are kept in a separate set of partitioned datasets (PDS) that all end with DBRM. The chart in Figure 3.6 shows the appropriate high level portion of the PDS name for each tier and path. Search the DBRMLIBs according to the instructions in Figure 3.6 until a DBRM with the same name as the package is found. Then, proceed to step 7 to bind the package. If the DBRM member is not found, the program should be precompiled/compiled/linked again to create a new load module and DBRM.

Figure 3.6 Test Library Hierarchy

PATH 1		PATH 2	-----PATH 3-----		PATH 4
	TPD.	TPD.	TPD.	TPD.	TPD.
ASSIST		N/A	N/A	N/A	N/A
TRAIN		N/A	=====>	TRN.CHAINB.	N/A
CAT	CAT.CHAINA.	CAT.CHAIND.	CAT.CHAINB.	<=====	CAT.CHAINC.
STRING	STG.CHAINA.	STG.CHAIND.	STG.CHAINB.	<=====	STG.CHAINC.
UNIT	UNT.CHAINA.	UNT.CHAIND.	UNT.CHAINB.	<=====	UNT.CHAINC.
<p>Find the location intersected by the tier and path at which you are testing. Search for the member in this library. If it is not found, search the libraries in order moving up the column.</p> <p>NOTE: If a location is blank, merely move up the column.</p> <p>Path 3 contains 2 columns. The column on the left is used only for Unit, String and CAT, and the column on the right is for Train.</p>					

STEP 5 - FIND THE LOAD THAT IS BEING EXECUTED

Batch Programs

Search the load libraries used by the step containing the execution of this program for the load module. These will have a naming convention that ends with BAT.LOADLIB, and will be listed in the STEPLIB DD of the step, if there is one. If there is no STEPLIB DD on the step, the libraries will be listed in the JOBLIB for the job.

Once you have found the load module, make sure that the library in which it was found is where it should be executed from. Remember, programs should never be run against the test environment from the PRD.BAT.LOADLIB library. In order to run the production version of the code, it should be run from TPD.BAT.LOADLIB. If the wrong version of the load module is being used, change the STEPLIB or JOBLIB to include the correct load library.

If the correct load module is being used, continue on to Step 6 to match the load module to the DBRM.

Online Programs

The load modules for online programs are kept in a series of libraries ending with CICS.ESA.LOADLIB for ESA programs or CICS.MVS.LOADLIB for MVS programs. Each CICS region has these libraries concatenated in a specific order to allow the CCF/MMF process to work correctly. Figure 3.5 shows the appropriate high level portion of the load library name and the library concatenation for the tier and path at which you are testing. Search the load libraries according to the instructions in Figure 3.6 until you find the load module for the program. Continue on to Step 6 to match the load module to the DBRM.

STEP 6 - MATCH THE LOAD AND THE DBRM

From the RC/Q Application Package List screen represented in Figure 3.5, enter a 'd' in front of the package. This will display the RC/Q Application Package Detail screen represented in Figure 3.7. Compare the consistency token (CONTOKEN) from this screen with the consistency token displayed in the error message or retrieved from Detector. If they match, go back and perform Steps 1 and 2 to ensure that the correct plan and collection were used.

Figure 3.7

RQPKD R03.05		----- RC/Q Application Package Detail -----		06-21-96 14:14:22	
COMMAND ==>				SCROLL ==> CSR	
DB2 Object ==> PK		Option ==> D			
Package ==> RFS998VS		Creator ==> DSSADC3		Where => N	
Collection ==> RFSBATC3		Grantor ==> *			
Version ==> *					
Loc: LOCAL ----- SSID: DBT		LVL: 01 -DBMZ127 -			
FRAME 1 OF 1					
***** TOP OF DATA *****					
CMD: _____					
PACKAGE: RFS998VS		CREATOR: DSSADC3			
COLLECTION: RFSBATC3		BOUNDBY: WELZ287		CONTOKEN: 15A1845103BD9FB0	
VERSION:					
PDSNAME: UNT.CHAINA.DBRMLIB					
CREATED: 06-17-1996 11:39:00		BASE SIZE: 1,712		VALID: YES	
LAST BOUND: 06-20-1996 13:26:19		AVERAGE SIZE: 1,535		OPERATIVE:	
YES					
PRECOMPILED: 06-20-1996 12:54:49		CONNECTIONS: 0			
QUALIFIER: DSSADC3		HOSTLANG: VS COBOL II			
VALIDATE: BIND		DELIMITER: APOST			
EXPLAIN: NO		DECIMAL: PERIOD			
ISOLATION: CS		CHARSET: ALPHANUMERIC			
RELEASE:		MIXED: NO			
SQLERROR: NOPACKAGE		DEC: 15			
REMOTE: NO		CURRENTDATA: NO			
DEGREE: 1					
***** BOTTOM OF DATA *****					

If they do not match, (this is what is expected) search the DBRM library at the tier and chain where the load module was found in Step 5. If the DBRM member for the program is not in this library, the program needs to be precompiled/compiled/linked to create a new DBRM and load module. If the member is found, browse it and turn on hex display by typing 'HEX ON' on the TSO command line. Figure 3.8 shows an example of a DBRM with the location of the consistency token shaded. The consistency token is always located on the first line of the DBRM beginning in position 25 for a length of 8 bytes. The consistency token is read top to bottom, left to right. For example, the consistency token from the DBRM displayed in Figure 3.8 is **158F20A605F92270**.

Figure 3.8 Finding the consistency token in the DBRM

[illegible]

Compare the consistency token found in the DBRM with the consistency token displayed in the error message or found in Detector. If they match, proceed to Step 7 to bind the package. If they do not match, browse the load module that you found in Step 5, turn hex display on by typing 'HEX ON', and search for the LAST 8 digits of the consistency token from the DBRM by typing "f xcccccccc" where cccccccc is the LAST 8 characters of the consistency token. If this value is not found, the DBRM and load module do not match. The program needs to be precompiled/compiled/linked to create a new DBRM and load module.

If the value is found, the FIRST 8 characters of the consistency token should be in the four bytes immediately FOLLOWING the location of the LAST 8 characters of the consistency token in the load module. This is illustrated in Figure 3.9.

Figure 3.9 Load Module Consistency Token

```

BROWSE ----- CAT.CHAINB.BAT.LOADLIB(RFS905VS) ----- CHARS X'05F92270' FOUND
COMMAND ==> CSR
***** TOP OF DATA *****
-----
          . 9   ñ w                U N G   y r   ^           4
00050007028000010200 0F27182A0200000100001211101E1D1C001A1918161514000F00111110
000800000800000C088059205F06 08000000040B9394968485870A88898B8384860214608F8082
-----
The consistency token in the load module is stored with the LAST 4 bytes
directly preceding the FIRST 4 bytes. In this example, the consistency
token is 158F20A605F92270.

```

If the entire consistency token from the DBRM matches the consistency token from the load module, and neither of these match the consistency token displayed in the error message or found in Detector, then this is not the load module that is being executed. If this is an online program, New Copy the program to pick up the correct load. Otherwise, Go to Step 5 to search for the load module that is being executed.

STEP 7 - BIND THE PACKAGE

From the RC/Query Application Package List screen represented in Figure 3.5 on a previous page, enter 'LBIND' on the CMD line in front of one of the packages listed. It is not necessary for the package you wish to bind to be on this list since all of the bind information can be changed. From the Batch Processor Display Input screen represented in Figure 3.10, enter 'EDIT' on the command line.

Figure 3.10

```

PTBPDI R03.00          ----- Batch Processor Display Input -----          06-21-96 14:15
COMMAND ==> edit                                     SCROLL ==> PAGE

                                                    Mode ==> O ONLINE

The following Batch Processor input has been generated. Press ENTER
to process, press END to cancel, or enter the EDIT command to edit.
----- DBMZ
***** TOP OF DATA *****
CALL DSN PARM(DBT )
DATA
      BIND PACKAGE(RFSBATC3) MEMBER(RFS905VS)
      LIBRARY('PRD.DBRMLIB')
      OWNER(DSSADC3 ) QUALIFIER(DSSADC3 ) CURRENTDATA(NO )
      VALIDATE(BIND)   EXPLAIN(NO )       ACTION(REPLACE)
      SQLERROR(NOPACKAGE) ISOLATION(CS)
      DEGREE(1 )
      FLAG(I);
ENDDATA
***** BOTTOM OF DATA *****

```

From the Edit Batch.Processor.Input screen represented in Figure 3.11, edit the following bind parameters, which are shaded in Figure 3.11. In the Package parameter, enter the name of the collection to which the package should be bound. In the Member parameter, enter the program name. In the Library parameter, enter the PDS where the correct DBRM was located. The Owner and Qualifier parameters should be set to the same value, which is the Agency qualifier. The format of the Agency qualifier is aaaADtp, where 'aaa' is the Agency acronym, 'AD' is a literal, 't' is the tier, and 'p' is the path. The tier and path positional characters should be the same as those in the collection name. The agency acronym is determined by the system acronym. If you do not know the Agency acronym, the query in figure 3.12 can be used to find it. Once all of the parameters have been entered, press F3 to return to the Batch Processor Display Input screen. From here, press Enter to execute the bind. Figure 3.13 represents the output from a successful bind. This should resolve the -805 SQLCODE.

Figure 3.11

```

EDIT ----- BATCH.PROCESSOR.INPUT ----- COLUMNS 001 0723
COMMAND ==> SCROLL ==> CSR3
***** TOP OF DATA *****
000001 .CALL DSN PARM(DBT )
000002 .DATA
000003     BIND PACKAGE(RFSBATC3) MEMBER(RFS905VS) -
000004     LIBRARY('CAT.CHAINB.DBRMLIB') -
000005     OWNER(DSSADC3)  QUALIFIER(DSSADC3) CURRENTDATA(NO )-
000006     VALIDATE(BIND)  EXPLAIN(NO )      ACTION(REPLACE) -
000007     SQLERROR(NOPACKAGE)  ISOLATION(CS) -
000008     DEGREE(1 ) -
000009     FLAG(I);
000010 .ENDDATA
***** BOTTOM OF DATA *****

```

Figure 3.12 SQL to display the Agency acronym for a system

The following SQL statement can be entered on the DB2 subsystem to display the Agency acronym for a system acronym.

```

SELECT CCF_SECTION, CCF_ACRONYM
FROM DASADM.CCF_ACRONYM
WHERE CCF_SECTION = 'sss'

```

Using a system acronym (sss) of RFS, the following result is displayed:

CCF_SECTION	CCF_ACRONYM
RFS	DSS

The Agency acronym for RFS is DSS.

Figure 3.13

```

BPA.AUDT   R03.00 ----- AUDIT Message File -----                                06-21-96
14:19
COMMAND ==>                                     SCROLL ==> CSR

----- USER ID: DBMZ127

.LIST TERM
RETCODE =   0

.CALL DSN PARM(DBT )
.ALLOC UNIT(SYSDA)          FI(SYSTSIN) NEW SPACE(2,4) TRACKS +
RECFM(F,B) LRECL(80)        BLKSIZE(6320)
.ALLOC UNIT(SYSDA)          FI(SYSTSPRT) NEW SPACE(4,80) CYL +
RECFM(VBA) LRECL(75)        BLKSIZE(6324)
.DATA
  BIND PACKAGE(RFSBATC3) MEMBER(RFS905VS)
    LIBRARY('CAT.CHAINB.DBRMLIB')
    OWNER(DSSADC3 ) QUALIFIER(DSSADC3 ) CURRENTDATA(NO ) -
    VALIDATE(BIND)   EXPLAIN(NO )      ACTION(REPLACE) -
    SQLERROR(NOPACKAGE) ISOLATION(CS)   -
    DEGREE(1 )      -
    FLAG(I);
.ENDDATA

  BIND PACKAGE(RFSBATC3) MEMBER(RFS905VS)
    LIBRARY('CAT.CHAINB.DBRMLIB')
    OWNER(DSSADC3 ) QUALIFIER(DSSADC3 ) CURRENTDATA(NO )
    VALIDATE(BIND)   EXPLAIN(NO )      ACTION(REPLACE)
    SQLERROR(NOPACKAGE) ISOLATION(CS)
    DEGREE(1 )
    FLAG(I);
DSNT254I + DSNTBCM2 BIND OPTIONS FOR
  PACKAGE = LINCOLN_TEST_DBT.RFSBATC3.RFS905VS.()
  ACTION      REPLACE
  OWNER       DSSADC3
  QUALIFIER   DSSADC3
  VALIDATE    BIND
  EXPLAIN     NO
  ISOLATION   CS
  RELEASE
  COPY
DSNT255I + DSNTBCM2 BIND OPTIONS FOR
  PACKAGE = LINCOLN_TEST_DBT.RFSBATC3.RFS905VS.()
  SQLERROR    NOPACKAGE
  CURRENTDATA  NO
  DEGREE      1
  DYNAMICRULES
DSNT232I + SUCCESSFUL BIND FOR
  PACKAGE = LINCOLN_TEST_DBT.RFSBATC3.RFS905VS.()
RETCODE =   0

CONTROL PROCESS CARD:
BATCH PROCESSOR PLAN  ==> RBPAP512
BATCH PROCESSOR ID    ==> (NONE)
DEVICE ALLOCATION UNIT  ==> SYSDA
***** BATCH PROCESSOR COMPLETE *****

```